

## Industrial Revolution Notes

- The Industrial Revolution was an increase in production (so that making of manufactured goods) brought about by the use of machines and characterized by the use of new energy sources.
  - Basically, we started making more stuff because machines made it so that people could work faster, and new energy sources made it so that the machines could work longer than people.
  - There was also an increase in food because of better agricultural equipment, more food meant a larger and healthier workforce, there was an increase in transportation, textile, coal, and money which led businesses and entrepreneurs to invest in new ideas.
- The first industrial territories started in the 18th Century in Liverpool, London, and Manchester.
  - There were advances in Agriculture, transportation, the making of clothing, as well as an increase in the population.

### *Agriculture and Life Expectancy*

- In the 18th century, new farming techniques were appearing
  - the construction of a better plough
  - the use of animal manure as fertilizer (and yes manure means poop, but animal poop)
  - the use of higher quality seeds for planting
  - crop rotation.
- More food meant that there were less people starving, which meant that the population of England would live longer.
- Life expectancy was short.
  - Most people would live to be between 25 and 35 years old.
  - In the late 18th century people weren't dying as young.
  - This was the direct result of better nutrition because of advances in agriculture, but also because of advances in general public health.
- During the revolution life expectancy was still short and mortality rates were high.
  - One in four kids died before the age of five.
  - There was no running water, sewers garbage pick up, police, firefighter, schools, hospitals, you were often in a one room house with a stove that was filled with smoke, if you could afford the coal, people caught diseases like tuberculosis and cholera.

### *Transportation*

- Before the industrial revolution, British ships brought raw materials from the colonies to be made into manufactured goods that would then be sold throughout Europe for money.
- The canals were used to ship manufactured good and raw materials inland across the country.

- Energy sources were still human, animal or wind powered, but that changed with the use of **coal and the invention of the steam engine.**
- Coal helped speed up industrialization.
  - The coal would burn, and heat water in a boiler which would produce steam which would then turn pistons to create energy. It was way more powerful and reliable than earlier energy, but it led to industry craving coal.
- Britain was lucky because they had several coal deposits which began to be mined. Without coal mining the industrial revolution would have been near impossible.
  - Steam and coal created some real changes.
  - Steam pumped water out of coal mines so that miners could dig deeper, ran steam hammers in iron foundries, ran looms and spinning machine for making clothes in factories and literally made the trains run on time. Coal created the heat to make the steam for steam engines, heated housing, and melted iron in foundries.
- Coal also replaced charcoal i'm melting ore to extract metal. Coal could be used to make coke, not that coke, this coke, which gets way hotter than coke. This led to the creation of better iron and eventually because of Henry bessemer, the creation of the steel industry.
- James Watt's improved on an earlier engine to build his watt's steam engine in 1781 and would be adapted in 1814 to be attached to a car that would run on rails.
  - By 1825 his locomotive could pull 20 passenger cars and 10 cars of coal.
  - Boats and canals would start being replaced by these trains.
  - By 1830 trains could travel at around 25 km an around and made travel across britain possible in record time and for less money.

### *Textiles*

- England had sheeps for centuries and artisans had been making clothing and cloth by hand forever.
  - Europeans liked the colored cloth from India so they stopped buying british wool, the british began to get their cotton from Australia and the west indies which was cheap because it was being picked by slave labor.
- The **spinning mule** was a first step in mechanizing the textile industry. By the end of the 18th century, the steam engine made it so that the textile industry was completely mechanize.
- These things combined led to things no longer being made by hand, but by machines worked by human. This was the **mechanization of production**. Jobs were also broken down into smaller pieces. This was called **division of labor**.

### *Economic Changes*

- The bourgeoisie or the middle class in Britain owned the means of production, such as the factories, while the workers owned the labor power. Workers sold their labor to the bourgeoisie workers for a wage or salary.
- Before the industrial revolution, most items were made at homes in cottages by artisans, but with the mechanization of production, things started being made in factories.

- A factory was great because all of the means of production, such as buildings, machines, raw materials, and workers were all in one place.
- With the machines and a lot of people, raw materials could be made into a greater amount of manufactured goods faster, which ended up making the goods cheaper.
- Now because there was a change in business and businesses were growing there was a need for money.
- Most entrepreneurs, people who start businesses didn't have enough money when they first got started to buy the means of production, so two things happened.
  - They began to borrow money from the bank (who stored people's savings and then lent some to these entrepreneurs who paid it back with interest)
  - they divided the money they need to run the business into shares. People who bought the shares then owned part of the company and would share in the company's profits. Get it? Buying shares lets you share the money.
- All people wanted was profit profit profit. the bourgeoisie lowered the workers salaries and raised the prices of goods as a way of making even more money.
  - **The idea of investing money in companies for profit is called capitalism.**
  - This was one of the big ideas of the Industrial Revolution and some people became pretty rich and used their wealth to influence politics...sound like anyone we know? This led to a new class. The industrial bourgeoisie.

#### *Movement From Countries To Cities*

- Now because of the industrial revolution there were all kinds of new jobs being created in newly developing cities.
- We saw how advances in farming made it so that fewer people needed to farm.
  - That means there wasn't that much work in rural areas. So people began moving to the city hoping to find work in factories. This movement of people from the country into the cities is known as **urbanization**.
- The problem with so many people moving so fast is that there was no planning in cities.
  - So that means there was no sanitation. Which makes where you live pretty gross.
  - Living conditions were bad rents went up, workers had to live near where they worked and the divide between rich and poor grew.
  - While the poor lived in cramped, polluted, houses with bad heating and high rent, the bourgeois were far away from factories and smog had more room so you were less chance of getting sick and had servants to help them out.

#### *New Classes*

- Industrial bourgeoisie
  - so the guys who own the banks and factories, or our entrepreneurs
  - The industrial bourgeoisie lived in nice houses didn't have to do manual labor and place a value on education, hard work, and being money wise. They were really the only ones who came out ahead in the economic growth of the 19th century.
- The petty bourgeoisie,
  - so lawyers, doctors, engineers, skilled workers

- the working class
  - the guys who worked in the factories.

### *Working Conditions*

- The working conditions in these factories were terrible.
- They worked between 14-16 hours a day six days a week their bosses were often jerks
- If you got ill, sick or hurt on the job you were fired, because you were easy to replace.
- Coal mine work was really tough.
  - You work in intense heat, with little fresh air, the mine could cave in at anytime, or you drowned or died because of explosions in mines, And in a lot of way mining today isn't much better.\
- The money was also terrible. A man would make such a little amount of money that his wife and children often had to work the same hours as the man by for less money.
- All this led to a miserable existence with little hope.
  - Alcohol abuse
  - domestic violence
  - Prostitution
  - Parents literally abandoning their children became commonplace.

### *The Start of Unions*

- Political principle of liberalism being called for by the bourgeoisie.
  - They wanted free enterprise.
  - This where thea company can operate without interference from the state
  - they also wanted very little government restrictions on what they could do, but like we saw during the French revolution and English enlightenment there was a recognition that the rights of the individual are actually something that matters.
- These terrible working conditions led to the workers of great Britain organizing in the mid 19th century into trade unions (so a group of workers whose goal it is to make their condition better).
  - There only means of negotiating for these better conditions was to strike, but a strike was considered an attack on the rights of the factories to make profit and strikes were banned by the government.
  - The unions wanted higher wages, less working hours and the right to strike.
  - The trade unions found that they had some allies in the petty bourgeoisie who saw how rough the working class had it.
  - They found socialist political parties to put pressure on the government to pass legislation that would improve working conditions.
  - Some socials were quite radical and wanted to overthrow the government and transfer the powers to the workers.
  - Some of These ideas came from German philosopher Karl Marx, he felt that a violent revolution would take place and workers would win. Marx called all the workers of the world to unite and overthrow the government.
- The government at the time was not too supportive of these ideas.
- The government repressed or put down these strikes, sometimes violently.

- They also refused to give rights to workers to organize, which goes against the basic freedoms laid out in the Bill of rights.
  - The idea of the government was laissez faire. Just leave things alone and not get involved.
- In the end in the 19th century different labor laws were passed that improved workers rights, such as:
  - kids under nine couldn't work
  - some trade unions were allowed
  - no more than an 80 hour work week for those under the age of 18
  - a 48 hour work week for those under 13
  - There would be elementary school free education
  - minimum wage